Withwell. The experiment shown in Fig. 61 illustrates the defect of the Withwell stove. Stoves of two designs were photographed, immersed in a glass tank filled with water, WithwelFs design on the left and the Cowper design on the right. The period illustrated is that during which they are upon gas, or heating. The uniform level of the lower surface of the colored kerosene forced downward through the checker passes of the Cowper stove illustrates the regularity of the heating of its checkerwork. In the Withwell stove, on the other hand, the chambers are filled with the colored kerosene in a manner which is far from uniform. The chambers

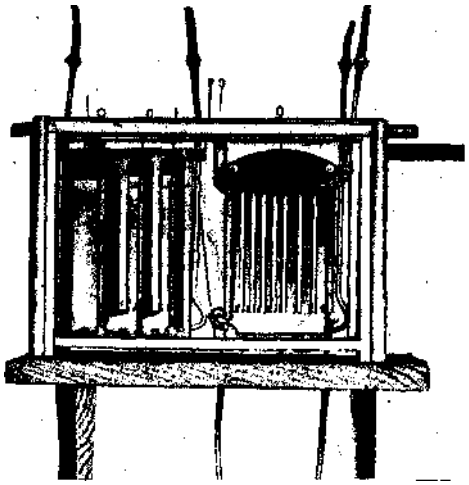

FIG. 61.

through which the kerosene descends are completely filled, while those in which it rises are not filled at all, the kerosene rising in a thread-like stream which comes into contact with a very small portion of the wall area of the chamber. These chambers, therefore, will not be uniformly heated; and for this reason will impart very little heat to the air. If water is introduced at the

lower
part of the model to represent the cold blast which is being heated, it will be seen that those chambers through which the water rises
are completely filled, while in those in which the water passes downward it falls in small streams which have very little contact
with the walls of the chamber. A mere glance at these models is